ROZEN, A.M.

The analogy between isotope exchange columns in countercurrent and adsorption processes, M. M. Rozen. Proc. Acad. Sci. U.S.S.R., Sect. Chem. Technol. 108, 45-8(1956)(English translation)—See C.A. 51, 4788h.

B. M. R.

1-RMU
1-4E4b

Rozen, A. M.

USSR/Processes and Equipment for Chemical Industries--   K-1
Processes and apparatus for chemical technology.

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10618

Author : Rozen, A. M.
Inst   : Academy of Sciences USSR
Title   : On the Analogy Between Countercurrent Ion Exchange and
           Absorption Processes

Orig Pub: Dokl. AN SSSR, 1956, Vol 108, No 1, 122-125

Abstract: An analogy is drawn between absorption processes and the
           process of isotope exchange in liquid-gas systems and
           the conclusion is drawn that the same methods of calcu-
           lation can be applied to both processes. The following
           quantities are introduced for the evaluation of the
           effectiveness of ion exchange: the degree of separation
           $G = (X_0-X_k)/[X_0-(y_0/a)]$ and the degree to which the gas
           phase approaches equilibrium is given by the expression
           $\varphi = y_g/aX_0$ where X_0 and y_0 are the concentrations of
           the liquid and gas phases as they enter the column, X_k

Card 1/2

ROZEN, A.M.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry,   B-8
        Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour   : Referat Zhur - Khimiya, No 1, 1958, 363

Author   : A.M. Rozen.
Inst   : —
Title   : Thermodynamics of Extraction Equilibria of Uranyl Nitrate.

Orig Pub   : Atomn. energiya, 1957, 2, No 5, 445-458

Abstract   : The extraction equilibria of $UO_2(NO_3)_2$ (I) were studied
          taking into consideration that this salt dissociates in
          the aqueous phase and is present in the organic phase as
          non-dissociated molecules. The association of ions does
          not essentially influence the distribution of I in the
          aqueous phase at an ion force up to 10. The character of
          the influence of the extracting solvent on the activity
          factor γ of I depends on the relation between Harned fac-
          tor ε_B (depending on the cation properties) and the ma-
          gnitude of ε_U characteristic of I. Should ε_B be less

Card 1/2

Rozen, A.M.

Distr: 4E4j

Data on the extraction properties of tributyl phosphate (TBP). S. M. Karpacheva, L. P. Khorkhorina, and A. M. Rozen. Zhur. Neorg. Khim. 2, 1441-7(1957).—The distribution of uranyl nitrate (~ 2-300 g./l. in the aq. phase) was measured for extn. with Bu_2O or the hydrocarbon fraction boiling at 170-270° contg. 10-100% TBP. The capacity of the solvent with respect to $UO_2(NO_3)_2$, calcd. on the basis of pure TBP was ~400 g./l. or ~1.7 moles/l. (U:TBP = 2.1:1). The distribution of HNO_3 was measured for solvents contg. 20, 40, and 100% TBP. The capacity of the solvent at high concns. of acid is greater than that which corresponds to the formation of the single solvate and approaches approx. 1.2 moles HNO_3 per mole of TBP. The distribution of $UO_2(NO_3)_2$ and HNO_3 was measured for their simultaneous presence and for concns. of 20 and 30% TBP and for solns. which are up to 2N with respect to HNO_3. In the presence of HNO_3 the capacity of the solvent with respect to $UO_2(NO_3)_2$ almost approaches the value that corresponds to the formation of the disolvate.

J. Rovtar Leach

ROZEN, A.M.; KHORKHORINA, L.P.

Thermodynamics of the extraction by tributylphosphate. Zhur. neorg.
khim. 2 no.8:1956-1969 Ag '57.   (MIRA 11:3)
        (Butyl phosphate)   (Uranyl nitrate)   (Nitric acid)

ROZEN, A.M.; KARPACHEVA, S.M.; SHEVELEV, Ya.V.

Mobility of oxygen in oxides, and kinetics of oxygen exchange.
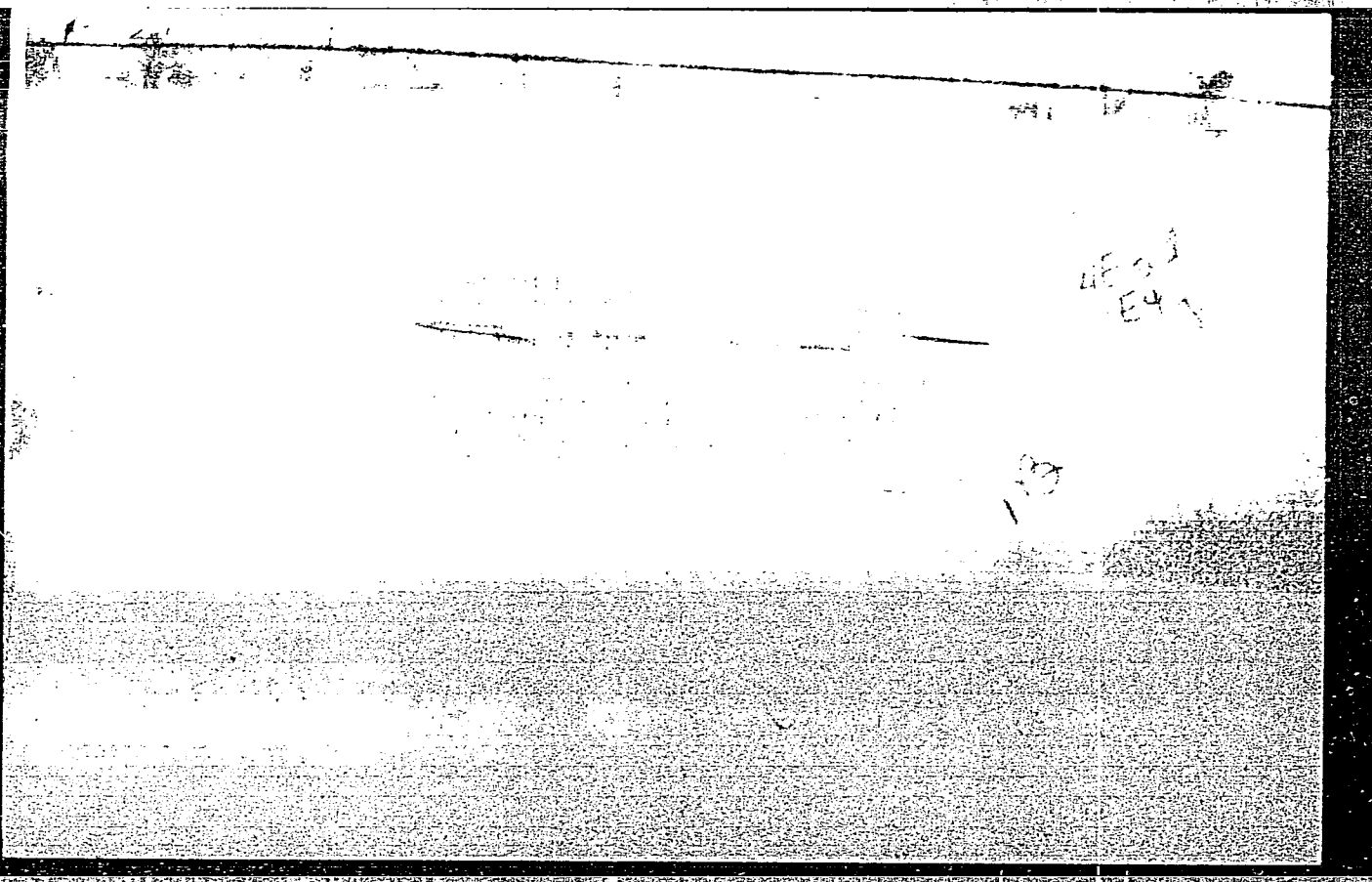Probl. kin. i kat. 9:251-263 '57.   (MIRA 11:3)
        (Oxides)   (Oxygen--Isotopes)   (Catalysts)

KARPACHEVA, S.M.; ROZEN, A.M.

The method of complete isotope analysis of water. Probl. kin. 1
kat. 9:386-390 '57.   (MIRA 11:3)
              (Water--Analysis)   (Hydrogen--Isotopes)

ROZEN, A. M.

PHASE I BOOK EXPLOITATION   SOV/1297

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniy v narodnom khozyaystve i nauke, Moscow, 1957

Polucheniye izotopov. Moshchnyye gamma-ustanovki. Radiometriya i dozimetriya; trudy konferentsii... (Isotope Production. High-energy Gamma-Radiation Facilities. Radiometry and Dosimetry; Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science) Moscow, Izd-vo AN SSSR, 1958. 293 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR; Glavnoye upravleniye po ispol'sovaniyu atomnoy energii SSSR.

Editorial Board: Frolov, Yu.S. (Resp. Ed.), Zhavoronkov, N.M. (Deputy Resp. Ed.), Aglintsev, K.K., Alekseyev, B.A., Bochkarev, V.V., Lebedinskiy, N.I., Malkov, T.P., Sinitsyn, V.I., and Popova, G.L. (Secretary); Tech. Ed.: Movichkov, N.D.

PURPOSE: This collection is published for scientists, technologists, persons engaged in medicine or medical research, and others concerned with the production and/or use of radioactive and stable isotopes and radiation.

COVERAGE: Thirty-eight reports are included in this collection under three main subject divisions:1) production of isotopes 2) high-energy gamma-radiation facilities, and 3) radiometry and dosimetry.

TABLE OF CONTENTS:

PART I. PRODUCTION OF ISOTOPES

Frolov, Yu.S., V.V. Bochkarev, and Ye.Ye. Kulish. Development of Isotope Production in the Soviet Union. This report is a general survey of production methods, apparatus, raw materials, applications, investigations, and future prospects for radio isotopes in the Soviet Union.   5

Card 2/12

ROZEN, A.M.

Theory of pulsating extraction columns. Nauch.dokl.vys.shkoly;
energ. no.3:173-186 '58.   (MIRA 12:1)

1. Rekomendovano kafedroy atomnykh elektrostantskiy Moskovskogo
energeticheskogo instituta.
(Nuclear fuels)   (Extraction apparatus)

AUTHORS: Gindin, L. M., Bobikov, P. I., Kouba, E. F., Kopp, I. F., Rozen,
A. M., Ter-Oganesov, N. A., Zagarskaya, N. I.

TITLE: Separation of Metals by the Exchange-Extraction Method
(Razdeleniye metallov metodom obmennoy ekstraktsii)

ABSTRACT: An extraction in connection with an exchange reaction between
metals is a very productive method of separation if these metals
are in different phases: in an organic phase as salts and ali-
phatic acids and in an aqueous phase as salts of mineral acids
(Ref 1). For this purpose saturated aliphatic acids with 5 and
more carbon atoms were used. They fulfill a double function:
a) they take part in the formation of the corresponding metallic
salts (soaps), and b) they serve as solvents for these soaps
being formed. Aliphatic acids are used most properly as solu-
tions in an inactive solvent with a low specific weight. Direc-
tions for the preparation of such solutions are mentioned. The
exchange reaction between the metals as mentioned earlier can be
expressed by the following equation:

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Separation of Metals by the Exchange-Extraction Method   SOV/20-122-5-34/57

$$(^1Me^{2+})_{aqu} + (^2MeR_2)_{org} \longrightarrow (^1MeR_2)_{org} + (^2Me^{2+})_{aqu}; \qquad (1)$$
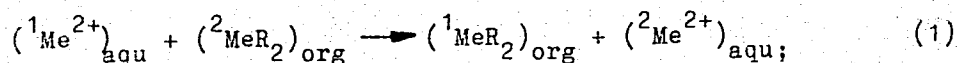
^1M and ^2M denote the corresponding metals, R - the organic residue of the aliphatic acid $C_nH_{2n+1}COO'$, the indices org and aqu denote the organic and the aqueous phase. The equilibrium constant of the exchange reaction depends on the character of the exchanging metals, as was confirmed by the experiments. Metals with a small pH value ("acid" metals) mainly pass into the organic phase, metals with a high pH value, however, (more alkaline metals) into the aqueous phase. In many cases reaction (1) takes place almost completely ($>99\%$), it may therefore be said that a metal is displaced from the organic phase by another metal. Separation of the metallic salts by means of the reaction mentioned in the title can be carried out from the aqueous as well as from the organic phase. In the first case (Fig 1) the aqueous phase which contains a mixture of salts of two metals is brought into contact with the organic phase in which a salt of an aliphatic acid of a stronger alkaline metal is contained. In the second case the organic phase which contains a mixture of salts of the aliphatic acids is brought into contact with the aqueous phase which contains a salt of a mineral acid of a

Card 2/3

Separation of Metals by the Exchange-Extraction Method   SOV/20-122-3-54/57

weaker alkaline metal. Table 1 reveals the results of separation
of metallic salts combined with sulfuric acid by means of the
discussed method. As organic phase a solvent of industrial
aliphatic acids of the fraction C_7 - C_9 (average molecular
weight 141) in petroleum (400 g/liter) was used. Data on table 1
characterize a single exchange. By using an extraction column
the degree of separation is considerably increased. If metals
have similar properties reaction takes place incompletely.
There are 2 figures, 1 table, and 1 reference, 1 of which is
Soviet.

ASSOCIATION: Noril'skiy gorno-metallurgicheskiy kombinat im. A. P.
Zavenyagina (Noril'sk Mining Metallurgy Kombinat imeni A. P.
Zavenyagin)

PRESENTED: May 4, 1958, by S. I. Vol'fkovich, Member, Academy of Sciences,
USSR

SUBMITTED: April 12, 1958

Card 3/3

AUTHOR: Rozen, A. M.   SOV/20-122-4-37/57

TITLE: The Impulse Method for Determining the Checker Capacity and
               an Investigation of the Liquid Behaviour in the Apparatus
               (Impul'snyy metod opredeleniya yemkosti nasadki i issledovaniye
               povedeniya zhidkosti v apparature)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 4, pp 671-673
               (USSR)

ABSTRACT: At present, the amount of liquid which is retained by the
               checker or by the plates, is largely determined by
               interruption of the wetting and by allowing the liquid to
               reflux into the checker. This method is connected with a
               standstill of the apparatus (which is not always possible)
               and hinders the determination of the liquid which remains
               behind as film; further, it is impossible to study the
               processes proceeding during the working. The impulse method,
               mentioned in the title, does not exhibit these deficiencies.
               It is based on the determination of the time within which one
               signal (impulse) passes the apparatus. This impulse can mean
Card 1/3   a short variation of the load, a charging with admixtures

The Impulse Method for Determining the Checker   SOV/20-122-4-37/57
Capacity and an Investigation of the Liquid Behaviour in the Apparatus

(which can for instance be determined by their electric
conductivity) or by a charging with labelled atoms. If the
front of the impulse in the apparatus were not obliterated
(Fig 1 a) the capacity of the checker Ω could be determined
by a simple ratio $\Omega = L T$ (1), where L means the liquid
consumption and T the transit time of the impulse. The liquid,
however, moves unsteadily in the apparatus and the impulse
front becomes obliterated. In this case equation (1) can be
used by determining the average duration T as

$$T = \int_0^\infty t I(t) dt \Big/ \int_0^\infty I(t) dt \quad (2)$$

where I(t) means the initial impulse curve. Figure 1 gives
the scheme of the initial curves (on a short or so-called
δ impulse) for some cases of a current with perfect mixing,
for instance at a developed turbulence; the skip distance
(sack) shows an exponential drop of the curve (Fig 1 b).
Figure 4 shows an experimental curve for a column with
net-shaped disks. The capacity of the checker, calculated
according to (1) and (2) has proved practically identical
with the capacity determined by the interruption method.
From the further results given the author concludes that

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The Impulse Method for Determining the Checker   SOV/20-122-4-37/57
Capacity and an Investigation of the Liquid Behaviour in the Apparatus

          by means of the impulse method the diffusion effects in the
          current could be investigated also. There are 4 figures.

PRESENTED: May 20, 1958, by S. I. Volf'kovich, Member, Academy of
               Sciences, USSR

SUBMITTED: May 20, 1958

Card 3/3

KARPACHEVA, S.M., doktor khim. nauk; ROZEN, A.M., kand. tekhn. nauk;
VASIL'YEV, V.A., inzh.; DYADINA, K.A., inzh.

Investigating packed pulse extraction columns. Khim. mash. 3
no.3:6-11 My-Je '59.   (MIRA 12:12)
          (Packed towers)

21(7), 5(4)

AUTHORS: Rozen, A. M.,   Moiseyenko, E. I.   SOV/78-4-5-44/46

TITLE: The Distribution of Plutonium by Extraction With Tributyl
            Phosphate (Raspredeleniye plutoniya pri ekstraktsii tributil-
            fosfatom)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 5,
            pp 1209-1214 (USSR)

ABSTRACT: The distribution coefficients of Pu(IV) and Pu(VI) were de-
            termined by extraction with a 20% TBP-solution in kerosene.
            The acidity of the solution varies between 0.1 and 10 mol/l.
            The uranium content in the solution under investigation amounts
            to 0 - 400 g/l. In the aqueous phase the dependence of the
            distribution coefficients Pu(IV) and Pu(VI) on the concentra-
            tion of nitric acid was investigated and shown by figure 1.
            In the case of the presence of uranium the distribution coef-
            ficient increases with an increase of HNO_3-concentration,
            and it again decreases in a 6 - 7 molar solution. The
            dependence of the distribution coefficients Pu(VI) and Pu(IV)
            was investigated in the presence of uranium. Results are
            shown by figures 2 - 5. It was shown that the macrocomponent
Card 1/2   in the aqueous phase causes salting-out, and that it causes

SOV/78-4-5-44/46

The Distribution of Plutonium by Extraction With Tributyl Phosphate

displacement in the organic phase. The distribution coeffi-
cients determined with and without uranyl nitrate show good
agreement with the data obtained by other authors. The in-
crease of $Pu(VI)$ at higher HNO_3-concentrations shows that
by the interaction between the components an increase of
the effective $Pu(VI)$-concentration is brought about. There
are 8 figures and 8 references, 3 of which are Soviet.

SUBMITTED: July 15, 1958

Card 2/2

ROZEN, A.M.; KARPACHEVA, S.M.; MEDVEDEV, S.F.; RODIONOV, Ye,P.; KISELEVA, L.F.

Investigating mass transfer in packed columns during extraction by means of tributyl phosphate (extraction and reextraction of nitric acid). Khim.prom. no.7:627-630 O-N '59.   (MIRA 13:5)
        (Packed towers)   (Mass transfer)

21(5)   SOV/89-7-3-21/29

AUTHOR: Rozen, A. M.

TITLE: The Internal Circulation of a Substance to Be Extracted and
                 the Technological Calculation of a Column in the Extraction
                 With Tributyl-phosphate

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 3, pp 277-281 (USSR)

ABSTRACT: In a column with a larger number of plates uranyl nitrate
                 possesses the special capability of displacing various
                 elements complex bound to tributyl-phosphate. Already at
                 a low uranyl nitrate concentration it displaces HNO_3 and
                 other compounds from the organic phase. Therefore, these
                 compounds may easily be separated in the lower part of
                 a plate column, in which there is no uranyl nitrate, and
                 where the distribution coefficient for HNO_3 and microelements
                 is comparatively high. In the upper part of this column,
                 where uranyl nitrate concentration is high, the other elements
Card 1/4   are displaced from the organic phase, i.e. under the in-

SOV/89-7-3-21/29

The Internal Circulation of a Substance to Be Extracted and the Techno-
logical Calculation of a Column in the Extraction With Tributyl-phosphate

fluence of uranium a re-extraction takes place. Thus, an
internal circulation occurs, which leads to an accumulation
of several compounds in the middle part of the column. The
maximum concentration here considerably exceeds the initial
concentrations. On the basis of several y-x-diagrams, which
originate from the references 1-3 and from S. Medvedev and
Ye. Rodionov, the internal circulation is more closely in-
vestigated in order to be able in the end effect to determine
the distribution of concentration along the length of the
column both for macro- and for microelements. The y-x-extrac-
tion diagrams are given for uranyl nitrate (various degrees
of acidity for HNO_3) and for plutonium. The distribution

of concentration along the length of the column is given for
the aqueous phase, viz. for uranyl nitrate, HNO_3 in the case

of different plate numbers, plutonium, etc. From the analysis

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SOV/89-7-3-21/29
The Internal Circulation of a Substance to Be Extracted and the Techno=
logical Calculation of a Column in the Extraction With Tributyl-phosphate

of the various diagrams it follows that the accumulation
in the middle of the column increases considerably if the
uranium zone is widened. On the other hand it may be possible,
if the critical working conditions are exceeded, that the
solvent does not suffice in order to extract the main com-
ponents. It is an important characteristic of the column to
what extent the "critical" working conditions have been
approached. This degree depends on the concentration, on
the loss of valuable components (e.g. plutonium) and on
the accuracy of the control processes. A relationship is
given, from which the number of plates can be calculated ac-
cording to the process which is intended to predominate.
It is certain that as a result of the occurrence of internal
circulation the number of plates must be considerably in-
creased. There are 3 figures and 3 Soviet references.

Card 3/4

5(2,3,4)
AUTHORS:

SOV/20-128-2-20/59

Gindin, L. M., Bobikov, P. I., Rozen, A. M.

TITLE:

Some Physico-chemical Peculiarities of the Exchange Extraction

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 295-298
(USSR)

ABSTRACT:

The exchange extraction is based on reactions proceeding
between the salts of fatty acids (soaps), which are mainly dis-
solved in the organic phase, and the salts of mineral acids dis-
solved in the aqueous phase (Ref 1). Besides the above-mention-
ed reaction (1), its equilibrium constant K (2) as well as the
equilibrium conditions for metal soaps (3) are indicated
(K_1 and K_2). The soaps are not dissociated in the organic

phase, but they are dissociated in the aqueous phase. In the
exchange reaction, the equilibrium conditions of the equations
of both soaps must be satisfied at the same time. A common
solution of the two equations (3) gives the value of K_1/K_2 (4).

From (2) and (4) it results that $K = K_1/K_2$, i.e. the equilibrium

constant of the exchange reaction is equal to the ratio of the

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SOV/20-128-2-20/59

Some Physico-chemical Peculiarities of the Exchange Extraction

distribution constants of the mutually exchanging metals.
Thus the direction of the exchange reactions is conditioned
by the distribution character of the corresponding soaps. The
metals, the soaps of which are less soluble in water, pass into
the organic phase, mainly as soaps. Metals with a higher water
solubility of their soaps are concentrated in the aqueous phase
as cations. With respect to the rising water solubility of
their soaps, the metals constitute the following sequence:
Fe^{III}, Pb^{II}, Cu^{II}, Zn, Ni^{II}, Co^{II}, Mn^{II}, Na; the same order is
maintained in the exchange reactions: each metal, which is
present as a cation in the aqueous phase, dislodges all metals
on its right in the sequence out of the soap dissolved in the
organic phase. The extraction of the metal by the organic phase
can be achieved by the introduction of an alkali into the
system. Figure 1 shows the experimental results characterizing
the extraction of Cu^{II}, Zn, Ni^{II}, and Co^{II} by a fatty acid
(fraction C_7-C_9 dissolved in petroleum, concentration of the

Card 2/4   acid 400 g/l) under the influence of NaOH. This shows that the

SOV/20-128-2-20/59

Some Physico-chemical Peculiarities of the Exchange Extraction

equation $\lg \alpha = K_6 + 2\,pH$ (11) derived from the above-mention-
ed equations is satisfied. With an increase in the basic
properties of the metals, the value of the constant K_6 decreases,
while the above-mentioned sequence of metals is maintained. It
is easy to prove that for metals of equal valency the constant
(1) is determined by the constants K_{Me-H} characterizing the
extraction of each metal mutually exchanging under the influ-
ence of the base. After further calculations ((12) - (20)),
the authors arrive at the conclusion that the solubility of
the soap in the aqueous phase is proportional to the cube root
of the solubility product of the metal hydroxide. This explains
the connection between the behavior of a metal during the ex-
traction by fatty acids, and its basicity. The separation of
metals by exchange extraction constitutes a peculiar hydrolytic
method of separation: this separation is distinguished from the
ordinary hydrolytic method by the absence of precipitation.
As is well intelligible, this separation proceeds more perfect-
ly since there is no carrying along by the solid phase. Be-

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SOV/20-128-2-20/59

Some Physico-chemical Peculiarities of the Exchange Extraction

sides, a multi-stage separation in counterflow columns is easier to be carried out. Therefore, this kind of extraction makes possible the separation of metals with similar properties (e.g. Co^{II} - Ni^{II}) which cannot be achieved by means of hydrolytic separation. Figure 2 shows the dependence of the $lg(Me^{+2})b$ on pH in the distribution of soaps. There are 2 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Noril'skiy gornometallurgicheskiy kombinat im. A. P. Zavenyagina (Noril'sk Mining Metallurgical Kombinat imeni A. P. Zavenyagin)

PRESENTED: April 6, 1959, by I. I. Chernyayev, Academician

SUBMITTED: March 30, 1959

Card 4/4

PHASE I BOOK EXPLOITATION   SOV/4723

Rozen, Adrian Mikhaylovich

Teoriya razdeleniya izotopov v kolonnakh (Theory of the Separation of Isotopes in
    [Thermal Diffusion] Towers) Moscow, Atomizdat, 1960. 437 p. Errata slip
    inserted. 5,000 copies printed.

Ed.: M.A. Saguro; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientific workers, chemical engineers, and
    students working on problems of the separation of isotopic and nonisotopic
    mixtures. It may also be useful in designing separation plants.

COVERAGE: This book comprises a lecture course given to engineers since 1953 and
    includes general conclusions from research on two-phase separation processes in
    towers, which the author has been concerned with since 1945. The research of
    Soviet scientists A.I. Brodskiy, N.M. Zhavoronkov, M.P. Malkov, and N.N. Tunit-
    skiy and of Western scientists including K. Cohen is reviewed. Chs. 1-6 deal
    with distillation, isotope exchange, thermal diffusion, mass diffusion, and
    centrifuging. Chapters 7-10 deal with common methods for the calculation of
    towers and cascades, with application of the methods and concepts of the

Card 1/13

LEBEDEVA, Ye.N.; KOROVIN, S.S.; ROZEN, A.M.

Extraction method of studying the polymerization of hafnium
in nitric acid solutions. Zhur. neorg. khim. 9 no.7:1744-
1757 Jl '64.   (MIRA 17:9)

APRAKSIN, I.A.; KOROVIN, S.S.; MUSORIN, V.A.; REZNIK, A.M.; ROZEN,
A.M.

Extraction of nitric acid by tributyl phosphate in the
presence of hydrobromic acid. Zhur. neorg. khim. 9 no.5:
1295-1296 My '64.   (MIRA 17:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.
Lomonosova kafedra khimii i tekhnologii redkikh i rasseyannykh
elementov.

ROZEN, A.M., NIKOLOTOVA, Z.I.

Extraction capacity of organic compounds as dependent on their
structure and the electronegativity of group-substituents.
Zhur. neorg. khim. 9 no.7:1725-1743 Jl '64.

(MIRA 17:9)

KARPACHEVA, S.M., doktor khim.nauk; ROZEN, A.M., kand.tekhn.nauk; VASIL'YEV, V.A., inzh.

Investigating the functioning of a pulse packing column. Khim.mash. no.2:13-16 Mr-Ap '60.   (MIRA 13:6)
(Packed towers)

ADAMSKIY, N.M.; KARPACHEVA, S.M.; MEL'NIKOV, I.N.; ROZEN, A.M.

Effect of temperature on the extraction of nitric acid with tributyl
phosphate. Radiokhimiia 2 no.1:13-19 '60.   (MIRA 14:5)
                    (Nitric acid)   (Butyl phosphate)

MOISEYENKO, E.I.; ROZEN, A.M.

Distribution of plutonium during extraction with tributylphosphate.
Part 2: Effect of temperature on the distribution of Pu(IV).
Radiokhimiia 2 no.3:274-280 '60.   (MIRA 13:10)
         (Plutonium)   (Butyl phosphate)
              (Extraction (Chemistry))

ADAMSKIY, N.M.; KARPACHEVA, S.M.; MEL'NIKOV, I.N.; ROZEN, A.M.

Distribution of zirconium in the extraction with n-tributyl
phosphate. Radiokhimiia 2 no.4:400-410 '60.   (MIRA 13:9)
                    (Zirconium)   (Butyl phosphate)

ILOZHEV, A. P.; PODDUBSKAYA, I. V.; ROZEN, A. M.

Distribution of butylphosphoric acids between aquous solutions
and tributyl phosphate. Radiokhmiia 2 no.4:411-418 '60.
(MIRA 13:9)

(Phosphoric acid)   (Butyl phosphate)

ROZEN, A.M.; VASIL'YEV, V.A.; GORSHKOVA, G.P.; BEZZUBOVA, A.I.

Mechanism of the process in packed colums with pulsation. Dokl.
AN SSSR 136 no.2:401-404 '61.   (MIRA 14:1)

1. Predstavleno akademikom S.I. Vol'fkovichem.
                    (Packed towers)

S/830/62/000/001/001/012
E111/E192

AUTHOR: Rozen, A.M.

TITLE: Physical chemistry of extraction equilibria

SOURCE: Ekstraktsiya; teoriya, primeneniye, apparatura.
             Ed. by A.P. Zefirov and M.M. Senyavin.
             Moscow, Gosatomizdat, 1962. 6-87.

TEXT: Quantitative aspects of extraction equilibria are
discussed and classified in terms of the type of dissociation and
the nature of the reaction present during extraction. The shape
of distribution curves using neutral solvents, electrolyte/non-
electrolyte equilibria, equilibrium constants in the extraction of
electrolytes, non-electrolyte/non-electrolyte equilibria, are
discussed and illustrated by working examples. After short notes
on the Nernst distribution law and thermochemical calculations,
the departure from ideality is elucidated at some length; the
equilibria for each of the classified types are considered, with
special emphasis on extraction of nuclear fuels including
allowance for mutual solubility of phases, extraction with mixed

Card 1/2

Physical chemistry of extraction ...   S/030/62/000/001/001/012
E111/E192

solvents and the influence of dilution; the theory of salting
out, equilibria with dissociation of the compounds in both phases.
Equilibria with transition from extraction of cations to
extraction of anionic complexes are also included. The author
stresses the importance of qualitative chemical concepts for
approximate prediction of the extraction-capability.
There are 31 figures and 4 tables.

Card 2/2

ILOZHEV, A.P.; PODDUBSKAYA, I.V.; ROZEN, A.M.

Distribution of butylphosphoric acids between aqueous solutions and tributyl phosphate. Ekstr.; teor.,prim.,app. no.2:71-79 '62.   (MIRA 15:9)

(Phosphoric acid)   (Butyl phosphate) (Hydrolysis)

ADAMSKIY, N.M.; KARPACHEVA, S.M.; ROZEN, A.M.

Extraction by carboxylic acids. Ekstr.; teor.,prim.,app. no.2:80-
86 '62.   (MIRA 15:9)
        (Extraction (Chemistry)) (Acids, Organic).

GIMDIN, L.M.; BOBIKOV, P.I.; PATYUKOV, G.M.; ROZEN, A.M.; KOUBA, E.F.;
     BUGAYEVA, A.V.

Separation of mixtures of metals by exchange extraction with
carboxylic acids. Ekstr.; teor.,prim.,app. no.2:87-111 '62.
                                 (MIRA 15:9)
   (Metals) (Extraction (Chemistry)) (Acids, Organic)

VORONETSKAYA, Ye.V.; ROZEN, A.M.

Density, viscosity, surface tension of solutions, and diffusion coefficients of substances in the system water – uranyl nitrate – nitric acid – tributyl phosphate. Ekstr.; teor.,prim.,app. no.2:199–208 '62.
(MIRA 15:9)
    (Uranyl nitrate) (Nitric acid) (Butyl phosphate)

ROZEN, A.M.; MOISEYENKO, E.I.

Thermodynamics of the extraction equilibria of plutonium. Ekstr.;
teor.,prim.,app, no.2:235-256 '62.   (MIRA 15:9)
        (Plutonium)   (Extraction (Chemistry))

ROZEN, A.M.; KARPACHEVA, S.M.; MEDVEDEV, S.F.; RODIONOV, Ye.P.; KISELEVA, L.F.

Mass transfer in the extraction and reextraction of uranyl nitrate in packed columns. Ekstr.: teor.,prim.,app. no.2:284-293 '62.

(MIRA 15:9)

(Uranyl nitrate)   (Extraction (Chemistry))
                (Mass transfer)

ROZEN, A.M.

Effectiveness of pulse columns (contribution to the theory of intensified countercurrent extractors) Ekstr., teor.,prim.,app. no.2:300-319 '62.   (MIRA 15:9)
                    (Extraction apparatus)

ROZEN, A.M.; VASIL'YEV, V.A.; BEZZUBOVA, A.I.; GORSHKOVA, G.P.

Certain regularities of hydraulics and mass transfer in packed pulse columns. Ekstr.; teor.,prim.,app. no.2:320-338 '62.

(MIRA 15:9)

(Extraction (Chemistry)) (Packed towers)

S/186/62/004/005/006/009
E075/E135

AUTHORS: Rozen, A.M., Khorkhorina, L.P., Karpacheva, S.M., and
              Agashkina, G.D.

TITLE: Influence of temperature on extraction with
              tributylphosphate

PERIODICAL: Radiokhimiya, v.4, no.5, 1962, 591-600

TEXT: The authors investigated the effect of temperature on
the simultaneous distribution of uranyl nitrate and nitric acid
between tributylphosphate (TBP) and the equilibrium aqueous phase
for acidities up to 8.0 M and the concentration of uranyl nitrate
from 0 to 1.0 M. The distribution was studied at 20, 40 and 70 °C.
The extractant (TBP) was dissolved in saturated hydrocarbons and
shaken with an equal volume of the aqueous solution. The
distribution coefficient increases and passes through a maximum with
the increasing concentration of HNO_3 (up to 3-4 N) and decreases at
higher acidities. The distribution coefficient of uranyl nitrate
is lowered by the increase of temperature from 20 to 70 °C but this
increase has no effect on the distribution of HNO_3. The
distribution of HNO_3 increases, however, with the increase of
Card 1/3

Influence of temperature on ...   S/186/62/004/005/006/009
                                         E075/E135

temperature from 20 to 70 °C in the presence of U. This is due to the decreasing distribution coefficient of uranyl nitrate, which increases the concentration of free TBP. The increasing concentration of uranyl nitrate in the organic phase causes a decrease in its content of HNO_3. An increase in the concentration of U in the equilibrium aqueous solution causes initially a sharp fall in the concentration of HNO_3 in the organic phase and, beginning with the U concentration of 100 g/litre, the concentration of HNO_3 remains almost constant. The apparent distribution constants were determined using the formula:

$$\tilde{K}_U = \frac{y_U}{T_{sv.}^2 \, x_U \, (2x_U + x_H)^2} \qquad (1)$$

where: y_U - concentration of U in organic phase; x_U - concentration of U in aqueous phase; x_H - concentration of HNO_3 in aqueous phase; T_{sv} - concentration of free TBP in organic phase.

Card 2/3

Influence of temperature on ...   S/186/62/004/005/006/009
                                       E075/E135

The constants for the aqueous solutions possessing different
acidities are practically identical. At 20 °C the following
approximate relation holds:

$$\tilde{K} \simeq 70\gamma_{\pm}^{3}$$

where $\gamma_{\pm}$ - activity coefficient of $UO_2(NO_3)_2$ in aqueous phase.

The constants decrease with the increasing temperature. The heat
of extraction is approximately 4660 cal/mole at a constant
effective concentration of HNO_3 in aqueous phase $x_{ef} = 0.2$ M and
3400 cal/mole for $x_{ef} = 1.2$ M.

There are 13 figures and 2 tables.

SUBMITTED: October 19, 1961

Card 3/3

S/020/62/143/006/024/024
B101/B110

AUTHORS: Reznik, A. M., Rozen, A. M., Korovin, S. S., and
            Apraksin, I. A.

TITLE: Extraction of zirconium and hafnium from solutions
            containing nitric and hydrochloric acids

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 6, 1962,
            1413-1416

TEXT: The extraction of large amounts (5 - 40 g/l) of Zr and Hf from
HNO_3, HCl, and HNO_3+HCl solutions (total acidity, 5 moles/l) with a 50%
solution of tri-n-butylphthalate (TBP) in o-xylene was studied. On the
basis of the reaction $Me^{4+} + 4A^- + 2TBP \rightleftharpoons MeA_4 \cdot 2TBP$ (1), the apparent
extraction constants were obtained as $\tilde{K} = \alpha/A^4 T^2$, where α is the
distribution coefficient; Me stands for Zr or Hf; A^- is the anion
concentration, moles/l; and T is the concentration of free TBP. The
rapid decrease of $\tilde{K}_{Zr}$ and $\tilde{K}_{Hf}$ with increasing concentration of Zr and Hf

Card 1/4

Extraction of zirconium and hafnium ...

S/020/62/143/006/024/024
B101/B110

is attributed to the formation of a non-extractable polymer as a result of chain reaction: $A_1 + A_n \overset{K_n}{\rightleftharpoons} A_{n+1}$, where n = 1,2,3,.... . According to I. Prigogine and R. Defay (Chemical Thermodynamics, London - N. Y. - Toronto, 1954) the following values were obtained: $\widetilde{K}_n^{Zr} \approx 8$ and $\widetilde{K}_n^{Hf} \approx 29$ in HNO_3, and $K_n^{Zr} \approx 13$ and $K_n^{Hf} \approx 3$ in HCl. A dependence of α_{Zr} and α_{Hf} on the HNO_3: HCl ratio was observed with HNO_3+HCl mixtures (Fig. 3). For constant values of $\widetilde{K}_1$ (in HNO_3) and $\widetilde{K}_2$ (in HCl) one obtains

$$\alpha_{Zr} = \left\{ \widetilde{K}_1 \left[(E^+) - (Cl^-) \right]^4 + \widetilde{K}_2 (Cl^-)^4 \right\} T^2 \text{ (A).}$$ This equation does not correspond to the experimental course of the curves. It is assumed that besides reaction (1), also the following reaction takes place:

$$Zr^{4+} + (4-i)NO_3^- + iCl^- + 2TBP \overset{\widetilde{K}_i}{\rightleftharpoons} Zr(NO_3)_{4-i}Cl_i \cdot 2TBP \text{ (i = 1-3).}$$ The complexes $Zr(NO_3)_3Cl \cdot 2TBP$ and $Zr(NO_3)_2Cl_2 \cdot 2TBP$ were found in the organic phase. $\widetilde{K}_i$ is defined by $\widetilde{K}_i = 4! \widetilde{K}_1^{i/4} \widetilde{K}_2^{4-i/4}/(4-i)!i!$, where

Card 2/5

Extraction of zirconium and hafnium ...   S/020/62/143/006/024/024
B101/B110

$\overset{\vee}{K}_1$ and $\tilde{K}_2$ are the constants of formation of the solvates
$Zr(NO_3)_4 \cdot 2TBP$ and $ZrCl_4 \cdot 2TBP$, respectively. Hence,

$$\alpha_{Zr} = \left[\left(\sqrt[4]{\tilde{K}_1} (NO_3^-) + \sqrt[4]{\tilde{K}_2}(Cl^-) \right) \right]^4 f^2 \quad (2).$$

This equation does not correspond to the experimental data either. When passing over from the apparent constants to thermodynamic constants ($K = \tilde{K} f_\pm^5$), one obtains Eq. (2), the right-hand side of which is multiplied by $f_\pm^5$. The correctness of attributing the extraction maximum of Zr to an increasing activity coefficient has to be verified by determining $f_{\pm Zr}$ in mixed media. As maximum Zr extraction is accompanied by the extraction of a small amount of hafnium with increasing HCl content, $\beta = \alpha_{Zr}/\alpha_{Hf}$ passes through a maximum: $\beta \sim 85$ at ~ 1.3 mole/l of HCl $\div \sim 3.7$ moles/l of HNO_3. This makes it possible to separate Zr from Hf. There are 4 figures and 1 table.

Card 3/5

REZNIK, A.M.; ROZEN, A.M.; KOROVIN, S.S.; APRAKSIN, I.A.

Extraction of zirconium and hafnium with n-tributyl phosphate
from solutions containing nitric and hydrochloric acids.
Radiokhimiia 5 no.1:49-59 '63.   (MIRA 16:2)
            (Zirconium)   (Hafnium)
                    (Butyl phosphates)

AUTHORS: Apraksin, I. A., Korovin, S. S., Reznik, A. M., Rozen, A. M.

TITLE: Extraction of hydrochloric acid with n-tributyl phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 1, 1963, 237 - 244

TEXT: The purpose of this study was to determine accurately the solva-
tion number for the extraction of HCl with tributyl phosphate (TBP) and to
describe quantitatively the equilibrium. The solvation number was deter-
mined for a HCl concentration of 6.0 and 8.8 mole/l in the aqueous equi-
librium phase by means of dilution with o-xylene; the distribution of HCl
between water and 50% TBP solution in o-xylene for 1 - 10 mole/l HCl in the
aqueous phase was also investigated. The formation of HCl·TBP monosolvate
was proved, while the formation of disolvate mentioned in publications could
not be confirmed. Best agreement of the calculated values for the extrac-
tion isotherm with experimental values was reached on the assumption that
the hydrosolvate HCl·TBP·nH_2O (n = 2 - 3) is extracted with HCl concentra-
tions in the aqueous phase below 9.0 mole/l, and the solvate 2HCl·TBP with
HCl concentrations above 9.0 mole/l in the aqueous phase. This is also

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S/078/63/008/004/010/013
A059/A126

AUTHORS: Rozen, A.M., Reznik, A.M., Korovin, S.S., Metonidze, Z.A.

TITLE: The extraction of nitric acid from a mixture with hydrochloric acid with n-tributyl phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 4, 1963, 1,003 - 1,010

TEXT: The results of studies performed on the joint extraction of HNO_3 and HCl by a 50% solution of tributyl phosphate (TBP) in o-xylene at HNO_3 concentrations between 0.25 and 4.0 moles/liter and HCl concentrations between 0.5 and 2.5 - 6 moles/liter are given. The fact that HCl in the presence of HNO_3 is not extracted throughout the whole concentration range studied is ascribed to the fact that the extraction constant of HNO_3 ($K \approx 0.2$) is by two orders in excess of that of HCl ($K \approx 10^{-3}$) so that HNO_3 expels HCl from the organic phase. Extraction of HNO_3 is considerably increased by the addition of HCl which means that HCl acts as a salting-out agent in this case. This is shown to be due to the increase in the activity coefficients of HNO_3 in the aqueous phase when HCl is present. The activity coefficient, $\gamma_{\pm}' HNO_3$, of HNO_3 in the presence of HCl

Card 1/3

S/078/63/008/004/010/013
A059/A126

The extraction of nitric acid from a ....

is calculated from the equation:

$$\gamma'_{\pm\ HNO_3} = \sqrt{\frac{\tilde{K}}{K}},\qquad(4)$$

where $\tilde{K}$ is the apparent and K the effective extraction constant. It is found that the Harden equation:

$$\left[\log \gamma_{\pm} (x, m) - \log \gamma_{\pm} (x, 0)\right]_{J=const} = -\delta_s J_s\qquad(5)$$

is satisfied, where $\gamma_{\pm} (x, m)$ is the activity coefficient in the presence of m moles of the salting-out agent, $\gamma_{\pm} (x, 0)$ the activity coefficient in the absence of the salting-out agent, but at the same total ionic strength of the solution, m is the concentration and J_s the ionic strength of the salting-out agent, and δ_s is the Harden coefficient depending on the characteristics of the salting-out agent. The mean value of the Harden coefficient was found to be $\delta_{HCl} = -0.028 \pm 0.001$. The equation of A.M. Rozen [Atomnaya energiya, v. 2, 445 (1957)]:

Card 2/3

The extraction of nitric acid from a ....

S/078/63/008/004/010/013
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$$\log \gamma_\pm (x, m) - \log \gamma_\pm (x, 0) = (\delta^* - \delta_s) J_s, \tag{7}$$

where δ^* is a constant value is found to hold. The increase in the activity coefficients of HNO_3 in the presence of HCl is explained by the stronger hydration degree of the latter ($n_{HCl} = 8$, while $n_{HNO_3} = 5$). The calculated activity coefficients of HNO_3 in the presence of HCl were found to agree satisfactorily with the respective experimental results. There are 9 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova, Kafedra khimii i tekhnologii redkikh i rasseyannykh elementov (Moscow Institute of Fine Chemical Technology imeni Lomonosov, Department of Chemistry and Technology of Rare and Trace Elements)

SUBMITTED: July 4, 1962

Card 3/3

ROZEN, A.M.; MIKHAYLICHENKO, A.I.

Periodicity of isotopic exchange in diatomic molecules. Dokl.
AN SSSR 148 no.5:1133-1136 F '63.   (MIRA 16:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva.
Predstavleno akademikom V.N.Kondrat'yevym.
                    (Isotope separation) (Quantum theory)

ROZEN, A.M.; MIKHAYLICHENKO, A.I.

Equilibrium constants in isotopic exchange as dependent on the
bond energy of molecules and atomic mass. Dokl. AN SSSR   148
no.6:1354-1357 -F '63.   (MIRA 16:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva.
Predstavleno akademikom N.M.Zhavoronkovym.
                        (Isotopes) (Chemical bonds)

ROZEN, A.M.; SABAYEV, I.Ya.; SHOKIN, I.N.

Determination of the degree of hydration of extracted sub-
stances. Zhur. neorg. khim. 9 no.6:1455-1464 Je '63
(MIRA 17:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendele-
yeva.

ROZEN, A.M.; ALEN'KIN, N.F.; GOLUB, S.I.

Mechanism of an advanced-stage purification of vapors by removing entrained drops in plate columns. Dokl. AN SSSR 154 no. 3:699-70. Ja '64. (MIRA 17:5)

1. Predstavleno akademikom S.I.Vol'fkovichem.

ROZEN, A.M.; KHORKHORINA, L.P.; YURKIN, V.G.; NOVIKOVA, N.M.

Interaction of tributyl phosphate and tributyl phosphate
solvate with diluents. Dokl. AN SSSR 153 no.6:1387-1390
D '63.   (MIRA 17:1)

1. Predstavleno akademikom A.N. Frumkinym.

ROZEN, A. M.; YURKIN, V. G.; et al

"Extraction Processes and their Mathematical Description."

report submitted for 2nd Intl Conf, Peaceful Uses of Atomic Energy, Geneva,
31 Aug- 9 Sep 64.

ROZEN, A.M.; MIKHAYLICHENKO, A.I.

Dependence of the separation factor in isotope exchange on the properties of the exchanging molecules. Atom. energ. 18 no.2: 147-156 F '65. (MIRA 18:3)

ROZEN, A.M.

Problems of the theory and engineering calculations of mass
transfer processes. Khim. prom. 41 no.2:5-11 F '65.   (MIRA 18:4)

1. Nauchnyy sovet po kibernetike pri AN SSSR.

L 48831-65   EWT(m)   Pub   DIAAP   IM

ACCESSION NR: AP5005806   8/0089/65/018/002/0147/0156

AUTHOR: Rozen, A. M.; Mikhaylichenko, A. I.

TITLE: Dependence of the coefficient of separation in isotopic exchange on the
properties of the exchanging molecules

SOURCE: Atomnaya energiya, v. 18, no. 2, 1965; 147-156

TOPIC TAGS: isotope separation, separation coefficient, isotopic exchange, diatom-
ic molecule

ABSTRACT: The authors extend and develop the premises and conclusions which they
derived earlier (Dokl. AN SSSR v. 48, 1133 and 1354, 1963) for the case of isotopic
exchange in diatomic molecules. The dependence of the equilibrium constant in iso-
topic exchange in diatomic compounds on the properties of the exchanging atoms and
molecules is considered. The properties considered are the force constant, the
dissociation energy, the electronegativity, the structure of the electron shell,
the internuclear distance, and the masses of the isotopic and supplementary atoms.
Semi-empirical relations are used to derive analytic equations describing the in-
fluence of these factors on the magnitude of the equilibrium constant. Correlation

Card 1/2

L 48831-65

ACCESSION NR: AP5005806

methods are found, making it possible to predict the character of variation of the β-factors in series of analogous compounds. Recommendations are made for the selection of isotope-selection systems. An attempt is made to extend some of the conclusions to include isotopic exchange in polyatomic compounds. Orig. art. has: 1 figure and 25 formulas.

ASSOCIATION: None

SUBMITTED: 28Mar63   ENCL: 00   SUB CODE: GP, GC

NR REF SOV: 013   OTHER: 015

Card 2/2

ROSEN, A.M., doktor khim. nauk; IAPAVOK, L.I., inzh.; YRIAL RAREV, B.V., inzh.

Hydraulic modeling of reflux apparatus of large diameter. Khim.
i neft. mashinostr. no.4:14-16 O '64.

(MIRA 17:12)

ROZEN, A.M.; KONSTANTINOVA, N.A.

Extraction capacity and reactivity of organic compounds
as dependent on their structure. Dokl. AN SSSR 166
no.1:132-135 Ja '66.   (MIRA 19:1)

1. Submitted June 23, 1965.

KOROVIN, S.S.; LEBEDEVA, Ye.N.; DEDICH, K.; REZNIK, A.M.; ROZEN, A.M.

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
Lomonosova, kafedra khimii i tekhnologii redkikh i rasseyannykh
elementov. Submitted April 15, 1964.

ROZEN, A. P.   In Latvian

ROZEN, A. P. -- "Significance of Splitting and Bark-Stripping Birch Wood to Accelerate
Drying and Prevent Rotting." Latvian Agricultural Academy, 1947. In Latvian (Disserta-
tion for the Degree of Candidate of Agricultural Sciences)

SO: Izvestiya Ak. Nauk Latviyskoy SSR, No. 9, Sept., 1955

ROZEN, B., kand.khimicheskikh nauk

      Beryllium today and tomorrow. Znan. sila 37 no.1:43 Ja '62.

                                              (MIRA 15:1)

                    (Beryllium)

ROZEN, B., dotsent, kand.khimicheskikh nauk

"Development and generalization of students knowledge of chemistry"
by G.I. Shelinskii. Reviewed by B. Rozen. Khim. v shkole 16 no.2:
89-90 Mr-Ap '61.   (MIRA 14:6)
                    (Chemistry--Study and teaching)
                    (Shelinskii, G.I.)

ROZEN, B., dotsent, kand.khimicheskikh nauk

In the service of science and industry. Khim. v shkole 16 no.2:
93-94 Mr-Ap '61.   (MIRA 14:6)
        (Chemistry, Analytical--Congresses)
        (Kurnakov, Nikolai Semenovich, 1860-1941)

SA

A 5 3

1573. Ionisation and Dissociation Processes in Simple Gases.
H. Kallmann and B. Rosen. Zeits, f. Physik, 58, 1-2, pp. 52-58,
1929. Phys. Zeits, 30, pp. 772-773, Nov, 1, 1929. Paper read before the
Deut Physikertag, Prague, Sept., 1929.

In an investigation of the ionisation products of simple gases using the
mass spectrograph, it is shown that previous measurements have yielded
indefinite results owing to the failure to allow adequately for the inter-
change of charge between ions and neutral molecules. The present
experiments show that in N_2, O_2, CO_2 and CO only primary ionisation
products are found. In particular for CO_2 it is shown that besides CO_2^+,
also CO^+ and C^+ arise as primary products. The method employed to
elucidate the above points was to vary independently the gas pressures
in the ionisation chamber and in the spectrograph respectively. W. S. S.

A 1 8 . 3 L A   METALLURGICAL LITERATURE CLASSIFICATION

2113. Induced Predissociation of S_2, Se_2, and Te_2. B. Rosen. *Acta Physica Polonica*, 5, pp. 193-206, 1936. *In French.*—In certain cases the selection rules for the radiationless transition involved in predissociation may be suppressed by the action of collision or a magnetic field and an induced predissociation produced.—Three cases are considered in reference to published work, and the results considered in reference to the predissociation of S_2, Se_2, and Te_2. The mode suggested for the predissociation differs from that previously accepted.   H. G. C.

13

Methods for the preparation of leather substitutes.
B. Rozen. *Kozhevenno-Obuvnaya Prom.* 1938, No. 3, 51.
Khim. Referat. Zhur. 1, No. 10, 73-41 (1938). — A review. — W. R. Henn

METALLURGICAL LITERATURE CLASSIFICATION

CA

The Kerch boron problem. I. M. Zarudskii and B. Yu.
Kossh. *Byull. Inst. Halurgii* 1938, No. 6, 42-53; *Khim.
Referat. Zhur.* 2, No. 4, 45(1930).—Before the discovery of
the Inder borate deposits (ascharite and hydroboracite)
the Kerch deposits were the only com. source of B in
U. S. S. R. The av. content of B_2O_3 is only 0.3-0.4%.
The Inder deposits of borates contain 25.7% of B_2O_3.
In spite of the relatively poor content of the borates in the
Kerch deposits they still can be utilized under certain
conditions.
W. R. Henn

ROZEN, B., kand. khim. nauk

   Molecules with iron hearts. Nauka i zhyttia 12 no.2:6 F '63.
               (MIRA 16:4)

      (Iron)

ROZEN, B., kand. khim. nauk

Polymers enter the stage. Znan. ta pratsia no.2:16 F '63.
(MIRA 16:4)

(Plastics)

ROZEN, B.Ya., kand. khim. nauk

Improving the education of specialists in the institutions
of higher education and technical schools, training
specialists for the chemical industry. Zhur.VKHO 10
no.4:453-454 '65.   (MIRA 18:11)

ROZEN, B., kand.khim.nauk (Leningrad)

Homeopathy of the soil. Tekh.mol. 29 no.3:14-15 '61.
(MIRA 14:3)

(Fertilizers and manure)   (Trace elements)

ROZEN, Boris Yakovlevich; KHADZHAYEVA, I.V., red.; PERKOVSKAYA, G.Ye.,
red. izd-va; PAVLOVA, V.A., tekhn. red.

[Chemistry of open and hidden fire] Khimiia iavnogo i tainogo ognia.
Moskva, Gos. izd-vo "Vysshaia shkola," 1961. 221 p.   (MIRA 14:7)
(Fire) (Chemistry)

ROZEN,B.Ya., kandidat khimicheskikh nauk; IORDANOVA,Ye.P., inzhener

Substitute filter fillers for SO^k locomotives made of wild plants growing in Turkmenia. Tekh.zhel.dor 6 no.9:31 S'47.   (MIRA 8:12)
(Locomotives)

ROZEN, B. YA.

Recovery of soda from the ashes of saksaul. B. Ya. Rozen. *Izvest. Akad. Nauk Turkmen. S.S.R.* 1951, No. 2, 58-60. Green branches of saksaul (*Haloxylon ammodendron*) are burned in open pits and the ashes ground and leached at 70-80°. The soln., sp. gr. 1.08, is concd. to 1.32, and the salt, approx. 20.7 and 2.03% Na and K carbonates, is crystd. out at temps. not higher than 25°.   I. Bencowitz

ROZEN, B. Ya.

USSR/Chemistry - Adhesives and Cements,   Sep 51
                  Acetylene Derivatives

"Wonder Cement," B. Ya. Rozen, Cand Chem Sci

"Nauka i Zhizn'" Vol XVIII, No 9, pp 34,35

A very effective new polymerization cement from
vinylethinyl carbinol, "carbinol glue" (I), was de-
veloped by I. N. Nazarov, Corr Mem Ac Sci USSR, who
received a Stalin prize for this work. I contains
diphenylamine as a stabilizer. A polymerization
catalyst is added before use. Al sheeting laminated
with I can be stamped (for the production of dinner
plates, etc.) without-damage to the cement layers.
I can be used for gluing together any heterogeneous

                                                                      213T23

materials, for mending clothing, etc. Marble tiles
of Moscow subway stations have been set with the
aid of I. Films of I are insol in most solvents
and are not affected by temps as high as 60°C or as
low as -60°C.

                                              213T23

Industrial utilization of fibers of wild plants. B. Ya. Rozen. Botan. Zhur. 30, 47-53(1951).—The feasibility of utilization of fibers from plants native to Mid-Asia and Kazakhstan is discussed. Particularly interesting are *Aristida karelini* and all species of *Typha* plants. The most effective extn. of the fibrous matter results from steeping in H_2O 40 hrs. at 20-35°, then boiling in 2% NH_4OH 2 hrs., and drying to 10-15% moisture content; after mech. cleaning, the fibers may be spun. The *Typha* fibers are best boiled with 1% NaOH 2.5-3.0 hrs. in the above scheme. For weaving, the fiber is treated with a lubricating oil-soap mixt. The cloths made from *Aristida* fibers are relatively weak, but the latter can be used for cross-threads in other types of cloth; the *Typha* cloths, however, compare well with the USSR standards for flax burlap in strength.

G. M. Kosolapoff

General & Physical
Chemistry

Iodine and bromine adsorption on mineral adsorbents from aqueous solutions. B. Ya. Rozen. *Doklady Akad. Nauk S.S.S.R.* 81, 243-6(1951).—A report of a study of the adsorption of mol. I and Br on clays and muds, including a consideration of the effect of the following ions on the adsorptions: K^+, Na^+, Mg^{++}, Ca^{++}, SO_4^{--}, and Cl^-. Before studying adsorption of I and Br on clays R. studied their adsorption on the individual components of the clays. Then the adsorption of mol. I and Br from aq. solns. with addn. of 1, 3, 5, and 10% of the salts that affect the adsorption was effected on the following adsorbents: (1) quartz sands, (2) clays, and (3) aged $Al(OH)_3$. Concn. of I in the aq. soln. did not exceed 0.001 N and of Br did not exceed 0.0025 N. There was an increase of the adsorption of I and Br in the presence of the following salts: KCl, NaCl, $MgCl_2$, $CaCl_2$, K_2SO_4, Na_2SO_4, $MgSO_4$, and $CaSO_4$. The effect of K^+ was greater than that of Na^+, the effect of Mg^{++} greater than that of Ca^{++}, and the effect of SO_4^{--} greater than that of Cl^-. In the presence of 1% KCl for iodine $K = 0.173$, $a = 3.81$ mg./g.; for Br $K = 0.044$, $a = 2.05$ mg./g. In the presence of 1% NaCl for iodine $K = 0.141$, $a = 3.20$ mg./g.; for Br $K = 0.042$, $a = 1.45$ mg./g. (K is the const. in the Freundlich adsorption isotherm equation, $a = Kc^n$.) The silica and the aged $Al(OH)_3$ adsorbents had almost identical adsorption capacities. On $Al(OH)_3$ the I adsorbs in larger quantities ($K = 0.124$, $a = 2.58$ mg./g.) than on Al_2O_3 ($K = 0.115$, $a = 1.5$ mg./g.). Br adsorbs on the $Al(OH)_3$ in smaller quantities ($K = 0.023$, $a = 0.80$) than on Al_2O_3 ($K = 0.036$, $a = 1.12$).

Gladys S. Macy

ROZEN, B. YA.

Kurnakov, Nikolay Semenovich, 1861-1941

Acad. N. S. Kurnakov, founder of physicochemical analysis, Khim. v shkole, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1958, Uncl.
    2

1. ROZEN, B. Ya.

2. USSR (600)

4. Chemical industries - history

7. History of the chemical industry in Russia to the end of the 19th century.
   P. M. Luk'yanov; reviewed by B. Ya. Rozen; Sov. kniga no. 9, 1952 Vol. 3

9. <u>Monthly</u> <u>List</u> <u>of</u> <u>Russian</u> <u>Accessions</u>, Library of Congress, <u>January</u> 1953. Unclassified.

ROZEN, B. YA.

Dyes and Dyeing

Light-resistant dyes from tannic raw material. Tekst. prom. 12 No. 9, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

RUZIN, B. YA

Carbon, Activated

T. E. Lovits' work on using carbon as an absorbent. Usp.khim. 21 No. 4, 1952

SO: Monthly List of Russian Accessions, Library of Congress,September 1952 1952, Uncl.

USSR/Chemistry - Priorities   Nov 52

"The Effect of Temperature on the Direction of
Displacement of Chemical Equilibria During Re-
versible Reactions," Ye. I. Akhumov and B. Ya.
Rozen, Leningrad

"Zhur Fiz Khim" Vol 26, No 11, pp 1711-1712

The authors refer to a publication by a Russian
scientist, A. L. Potylitsyn, in 1881, which,
they claim, preceded van't Hoff's formulation of
his law of equil by four years. Therefore, they
state, the Russian scientist had priority, and
the van't Hoff law should be henceforth renamed
the Potylitsyn-van't Hoff law.

242T19

ROZEN, B.

Federov, Evgraf Stepanovich, 1853-1919.

Founder of the science on crystals ("E.S.Federov" by I.I.Shafranovskiy.) Reviewed by B.Rozen
Novyi mir 28, no. 10, 1952.

DECEMBER 1952

9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

ROZEN, B. Ya.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

The second curve of solubility (supersaturation). B. I.
Alhumov and B. Ya. Rozen. Doklady Akad. Nauk S.S.S.
R. 85, 363-6 (1952). The max. concns. of supersatd. solns.
of anhyd. and hydrated salts obey the soly. law of Le Chate-
lier and are considered as the "second" soly. of a given sub-
stance. This conclusion is supported by available data on
K_2SO_4, $HgCl_2$, $K_2Cr_2O_7$, and 3 hydrates of Na_2CO_3.
I. Bencowitz

ROZEN,B.Ya.; MAKSIMOVICH,A., redaktor; PO"YEL'SKAYA,K., tekhnicheskiy
    redaktor

    [Story of a piece of wood] Rasskaz o kuske dereva. Petrozavodsk,
    Gos.izd-vo Karelo-Finskoi SSR, 1953. 77 p.   (MLRA 9:3)
                                    (Wood)

PARMENOV, K.Ya.; SOFONOVA, I.N.; TETERIN, M.A. [authors]; ROZEN, B.Ya., kandidat khimicheskikh nauk [reviewer].

"Experimental work of chemistry students." K.Ia.Parmenov, I.N.Safonova, M.A.Teterin. Reviewed by B.Iu.Rozen. Khim. v shkole no.3:75-77 My-Je '53.

(MLRA 6:7)

(Chemistry--Experiments) (Parmenov, K.Ya.) (Safonova, I.N.)

(Teterin, M.A.)

ROZEN, B.Ya.

Accumulation and distribution of iodine and bromine in saline lakes and oil-well waters. Ukr.khim.zhur. 19 no.6:679-682 '53.
(MIRA 8:5)

(Iodine) (Bromine) (Mineralogy, Determinative)

ROZEN, B.Ya., kandidat khimicheskikh nauk.

Halogens. Nauka i zhizn' 20 no.10:29-32 O '53.

(MLRA 6:10)
(Halogens)